FROLOV, K.K.

Wages of highway transport workers. Avt. transp. 43 no.8:26-28 Ag
'65.                                                    (MIRA 18:9)

1. Starshiy inspektor Gosudarstvennogo komiteta Soveta Ministrov
SSSR po voprosam truda i zarabotnoy platy.

FROLOV, K.K.; GAVRILOV, S.V.

Wages of automotive transportation workers. Avt. transp. 43
no.9:34-35 S '65.
(MIRA 18:9)

1. Starshiy inspektor Gosudarstvennogo komiteta Soveta Ministrov
po voprosam truda i zarabotnoy platy (for Frolov). 2. Starshiy
inzhener otdela truda i zarabotnoy platy Ministerstva avtomobil'-
nogo transporta i shosseynykh dorog RSFSR (for Gavrilov).

NECHAYEV, K.A.; NOVOSLAVSKAYA, O.Ya.; FROLOV, K.M.; KHANINSON,
    Ya.G.; VOLKOVA, K.V., red.; VOROTILINA, L.I., tekhn. red.

[Novosibirsk; notable places and sights] Novosibirsk; pa-
miatnye mesta i dostoprimechatel'nosti. Novosibirsk, Novo-
sibirskoe knizhnoe izd-vo, 1961.  174 p.        (MIRA 15:8)
                    (Novosibirsk--Guidebooks)

FROLOV, Konstantin Pavlovich; PUSHKANTSEV, Boris Naumovich; BYALYY,
Semen Mikhaylovich; RASHCHUPKINA, L.I., red.; MAYOROV, V.V.,
tekhn. red.

[Receiving and processing food and forage corn at grain receiving
stations] Priem i obrabotka prodovol'stvenno-furazhnoi kukuruzy
na khlebopriemnykh punktakh. Moskva, 1962. 11 p. (MIRA 16:6)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR.
Pavil'on "Khraneniye i pererabotka zerna."
        (Corn (Maize))  (Grain elevators)

PYSHKIN, Viktor Petrovich, inzh.; KARABANOV, Sergey Aleksandrovich,
        inzh.; PONOMAREV, Vladimir Aleksandrovich, inzh.; FROLOV,
        K.P., inzh., red.; VOLKOV, P.N., red.; SAVEL'YEVA, Z.A.,
        tekhn. red.

        [Manual for the mechanic of a grain receiving station]
        Spravochnik mekhanika khlebopriemnogo punkta. Pod red. K.P.
        Frolova. Moskva, Zagotizdat, 1963. 243 p.     (MIRA 16:9)
                (Grain handling machinery)

FROLOV, K.P., inzh.

Scraper buckets with 76m$^3$ capacity. Transp.stroi. 9  no.8:55
Ag '59.                                                (MIRA 13:1)
                (United States--Scrapers)

FROLOV, K.P., inzh.

Braced mobile cranes for assembling span structures of
high bridges. Transp.stroi. 9 no.9:55 S '59.
(MIRA 13:2)
(United States--Cranes, Derricks, etc.)
(Mississippi River--Bridges)

FROLOV, K.P., inzh.

Tunneling equipment. Transp. stroi. 9 no.11:53 N '59     (MIRA 13:3)
(Tunneling--Equipment and supplies)

FROLOV, K.P., inzh.

Laboratory for testing reinforced concrete construction elements.
Transp.stroi. 9 no.12:53 D '59.          (MIRA 13:5)
   (United States—Reinforced concrete—Testing)

FROLOV, K.P.

A book which is useful for engineers and technicians. Avtom., telem.
i sviaz' 4 no.4:46 Ap '60.                                    (MIRA 13:6)

1. Pomoshchnik dorozhnogo revizora po bezopasnosti dvizheniya
Kazanskoy dorogi.
                    (Railroads--Signaling)

FROLOV, K.P., inzh.

    Cable suspended railroad over the English Channel. Transp. stroi.
11  no.10:55-56  O '61.                                    (MIRA 14:10)
          (English Channel--Railroad bridges)
            (Railroads, Single-rail)

FROLOV, K.V., inzh.

Contactless tensiometry. Energomashinostroenie 3 no.12:42
D '57.                                                    (MIRA 11:1)
          (Turbines)    (Tensiometers)

FROLOV, K. V.

"On the modelation of the resonance effects of some autonomous non-linear oscillatory system."

Paper presented at the Intl. Symposium on Nonlinear Vibrations, Kiev, USSR, 9-19 Sep 61

Institute for the Research of Machines of the USSR Academy of Sciences, Moscow, USSR

S/179/61/000/005/009/022
E191/E481

AUTHORS:      Kononenko, V.O. and Frolov, K.V. (Moscow)

TITLE:        On the interaction between a nonlinear vibrating
              system and an energy source

PERIODICAL:   Akademiya nauk SSSR. Izvestiya. Otdeleniye
              tekhnicheskikh nauk. Mekhanika i mashinostroyeniye.
              v.5, 1961, 69-76

TEXT:     Characteristic features of the interaction between a
nonlinear oscillating system and a source of energy were examined
by S.S.Korablev (Ref.1: Trudy IMASh AN SSSR, 1959, v.1) and one
of the present authors, V.I.Kononenko (Ref.2: Izv. AN SSSR, OTN,
Mekhanika i mashinostroyeniye, 1960, no.6).   Some of the results
obtained were verified by experiment with a mechanical model.
The present paper reports the examination of the problem with the
help of an electronic model simulating the nonlinear mechanical
oscillating system considered in the papers quoted above.   Briefly,
the mechanical system has a nonlinear elastic force obeying a law
with a linear and a cubic term.   The vibrations are excited by the
inertia forces of an unbalanced mass rotated by a motor with a

Card 1/4

On the interaction between ...

S/179/61/000/005/009/022
E191/E481

with a known torque/speed characteristic.    Changing over to
electronic models became possible after verification, furnished in
the earlier experiments already quoted, that the static
characteristics of energy sources could be substituted in solving
the dynamic problem.    Although electronic models inherently
embody a convenient variability of parameters, the range
investigated did not exceed that adopted in the author's earlier
paper (Ref.2) when constructing the approximate solutions of
nonlinear equations.    The only exception was the parameter of
nonlinearity which is the constant factor in the cubic term in the
relation between the force and the displacement.    This was varied
in a larger range to reveal the behaviour of the system in the
presence of a substantial nonlinearity.    The scale factors are
derived from the permissible maxima of the electrical variables and
introduced into the equations of motion of the mechanical system
thus deriving a system of two equations for which the analogue
circuit was devised.    The sine and cosine functions required the
special blocks designed by V.S.Tarasov and his team (Ref.3:
Nauchn.-tekhn. informats. vyl. LPI, 1959, no.5;  and Ref.4:
Elektrichestvo, 1960, no.4).    The programme of the investigation
Card 2/ 4

On the interaction between ...     S/179/61/000/005/009/022
E191/E481

had three aims.  (a) The study of the steady-state conditions,
where it is described by a harmonic displacement of the mass at the
forced frequency on which a small periodic function of time is
superimposed and the motion of the exciting unbalance has another
small periodic function superimposed upon a uniform rotation.
In particular, the nature of steady-state conditions with
substantially increased nonlinearity and at a substantial
departure from resonance was of interest as representing a
violation of the conditions on which the approximate analytical
solutions were based.  (b) The clarification of non-steady state
which arises near the limits of the stability region when the
system changes over from one steady-state condition to another.
(c) The discovery of any peculiarities in the motion of the system
when the steady-state criteria established analytically are not
fulfilled.  The effect of the exciting motor characteristic was
the centre of attention.  The slope of the characteristic curve
could be easily varied.  The technique of experimentation
permitted the construction of resonance curves for rising and
falling values of the forcing frequency separately.  Transient
Card 3/4

On the interaction between ...

S/179/61/000/005/009/022
B191/E481

conditions arising in switching on did not form part of the
investigation but those which occurred between two steady states
were examined.    Owing to the pronounced difference between the
resonance phenomena in systems with stiffening and unstiffening
nonlinearity terms in the restoring force equation, each case was
examined separately.    The results of the experiments are given in
graphs where the amplitude is plotted against the forcing frequency
and in oscillograms of displacement against time (for the non-steady
states).    Without revealing any new salient features, the results
of these electronic simulator tests confirm the basic propositions
about the properties of nonlinear systems with nonideal sources
of energy found earlier (Ref.2).    Emerging from the limitations
imposed by the mathematical methods used earlier did not yield
substantially new results.    There are 12 figures and 4 Soviet-bloc
references.

SUBMITTED:    June 27, 1961

Card 4/4

FROLOV, K.V. (Moskva)

Self-excited vibrations considering properties of the energy source. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr no.1:83-86 Ja-F '62.                                  (MIRA 15:3)

(Vibration)

39806
S/179/62/000/003/006/015
E191/E413

ΔУ 4200

AUTHORS:     Kononenko, V.O., Frolov, K.V. (Moscow)

TITLE:       On the resonance properties of a parametric oscillating system

PERIODICAL:  Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.3, 1962, 73-80

TEXT:  Reference is made to a previous paper by the senior author (Ref.1: Izv. AN SSSR, OTN, Mekhanika i mashinostroyeniye, no.5, 1960) wherein steady-state conditions were examined subject to limitations determined by the approximate methods of analysis employed.  In the present paper, a parametric oscillating system with a low depth of parameter modulation is considered on the assumption that the source of energy which imposes the periodic (or almost periodic) variation of the parameter of the system can interact with the oscillating system so that the oscillations become dependent on the properties of the energy source.  The physical oscillating system considered is an elastic bar subject to a periodic force in its axial direction, so that its bending

Card 1/ 3

On the resonance properties ...

S/179/62/000/003/006/015
E191/E413

stiffness changes periodically.   Under certain conditions, as a result of the periodic variations of stiffness, parametric oscillations of the bar in the direction transverse to its axis take place.   Details of the system are given in Ref.1.   The equations of motion are formulated, and its simulation by an analogue computer is illustrated with the help of a block diagram and discussed.   The equations of motion contain a term with the cubed transverse coordinate.   The coefficient of this term is the nonlinearity parameter which, in the present paper, is examined within a wider range than before.   The purposes of the simulator studies were (a) to establish the motion of the system under steady-state conditions at positive, negative and zero values of nonlinearity;  (b) to clarify the nature of the nonstationary conditions of motion arising near the boundaries of stability and corresponding to the transition from one steady state to another and (c) to observe the motion of the system when the conditions of stability are not fulfilled.   The energy source characteristic curve is conceived as a linear function of the torque against speed of a motor which imposes a periodic force on the bar.   The Card 2/3

On the resonance properties ...

S/179/62/000/003/006/015
E191/E413

slope of this curve is among the important physical properties of the system. The nonlinear restoring force is denoted as "hard" when the nonlinearity parameter is positive and as "soft" when the parameter is negative. The results of the analogue computer simulation are illustrated and discussed, selecting the behaviour in the resonance region where the interaction of the oscillating system with the source of energy is most pronounced. The three cases of hard, soft and zero restoring force are considered separately. The main result of the present investigation is a broader view of the nonlinearity parameter limiting the amplitude of parametric oscillations. In systems considered here, the factor which limits the amplitude of parametric oscillations is the nonlinear link between the energy source and the oscillating system. This link varies with the variation of the steepness of the characteristic curve of the energy source, so that parametric oscillations with limited amplitudes can be obtained by an appropriate variation in the steepness of the energy source curve. There are 11 figures.

SUBMITTED:    December 26, 1961
Card 3/3

S/114/62/000/004/006/008
E114/E554

*26.2120*

AUTHOR:      Frolov, K.V., Engineer

TITLE:       Some problems of measuring stresses in turbine
             blading in service

PERIODICAL:  Energomashinostroyeniye, no.4, 1962, 33-37

TEXT:        The author describes improved methods of attaching
wire-wound strain gauges for measuring stresses in moving turbine
blading developed by the LMZ.   Basically the strain gauge is
made of constantan wire 0.03 mm diameter, wound on paper base with
a 2 mm radius loop left at the point of attachment to the tails
and impregnated with phenolic plastic glues.   Depending on the
application the strain gauge is protected by a piece of textile
mesh or a brass mesh embedded in the plastic.   Strain gauges
attached to moving blades of turbines and working in steam are
protected by a steel foil enclosing the gauge and welded to the
blade.   Special methods of welding were developed which resulted
in negligibly small areas of degraded metal – each spot weld
took about a millisecond.   The steel foil also protects the
strain gauge from interference and static electrical fields. The

Card 1/2

Some problems of measuring ...          S/114/62/000/004/006/008
                                        E114/E554

data are transmitted by an amplitude modulated radio transmitter
and receiver suitable for speeds of 0-6000 r.p.m., and using
2-ring antenna - one insulated ring on the shaft and one
stationary ring.  Vibrations, droplets of water or oil in the gap
between the rings vary the capacitance of the antenna system and
cause difficulties.  If these are too great, frequency modulation
has to be used.  Any commercially available f.m. receivers are
suitable.  Power to the transmitter is supplied through slip ring
contacts, but since these carry relatively high voltage and not
the weak signals, they do not introduce inaccuracies.  Solenoid
operated step-by-step switching arrangement allows the transmitter
to be connected to each strain gauge in turn.  The apparatus is
suitable for use at temperatures up to 200°C.  There are 7 figures
and 2 tables.

Card 2/2

FROLOV, K.V., kand. tekhn. nauk

Investigating the resonance properties of a parametric vibratory
system. Nauch. trudy MTILP no.24:201-208 '62.    (MIRA 16:7)

1. Kafedra detaley mashin Moskovskogo tekhnologicheskogo
instituta legkoy promyshlennosti.
(Vibration)

MIKITYUK, Ye.P.; BARDASHEV, S.P.; PASECHNIKOV, N.S.; APIN, L.R.; PETROV,
V.N.; DEMIDENKO, Ye.I.; MITROVICH, V.P.; FROLOV, K.V.

Author's abstracts of dissertations. Vest.mashinostr. 42
no.7:87-88 Jl '62.                                    (MIRA 15:8)

1. Kiyevskiy politekhnicheskiy institut (for Mikityuk).
2. Moskovskiy aviatsionnyy institut imeni Sergo Ordzhonikidze
(for Bardashev). 3. Leningradskiy sel'skokhozyaystvennyy institut
(for Pasechnikov). 4. Moskovskiy stankoinstrumental'nyy institut
(for Apin, Mitrovich). 5. Chelyabinskiy politekhnicheskiy
institut (for Petrov). 6. Gor'kovskiy politekhnicheskiy institut
imeni A.A.Zhdanova (for Demidenko). 7. Rizhskiy politekhnicheskiy
institut (for Frolov).                   Riga
           (Bibliography--Mechanical engineering)

ACCESSION NR: AT4017772                    S/3037/63/003/000/0498/0513

AUTHOR: Frolov, K. V. (USSR)

TITLE: Simulation of the resonance properties of some autonomous nonlinear
oscillatory systems

SOURCE: International Symposium on Nonlinear Oscillations. Kiev, 1961.
Prilozheniya metodov teorii nelineyny*kh kolebaniy k zadacham fiziki i tekhniki
(Applying methods of the theory of nonlinear oscillations in problems of physics
and technology); trudy* simpoziuma, v. 3. Kiev, Izd-vo AN UkrSSR, 1963, 498-513

TOPIC TAGS: automation, control system, nonlinear oscillation, autonomous non-
linear oscillation, resonance, oscillatory system resonance, simulation, resonance
simulation, analog computer

ABSTRACT: The fundamental results are given of an investigation of induced oscil-
latory phenomena in systems with nonlinear characteristics of elastic couplings and
in systems with periodically changing parameters on analog computers. The oscilla-
tions were excited by an energy source having an assigned characteristic. The re-
lation of this characteristic to the oscillatory system is considered, as well as
its effect on the stability of periodic stationary oscillations at resonance.
The point is made that the joint examination of the oscillatory with the energy

Card 1/3

ACCESSION NR: AT4017772

source leads to entirely new concepts of great scientific and practical importance. Thus, for example, the classical concept of the stable and unstable states of non-linear oscillatory systems and of the unlimited increase of amplitudes in parametric systems at resonance corresponds to an energy source (motor) with an un-limited margin of power. By properly selecting the energy source characteristics, stable oscillations can be obtained where they were considered unstable, and vice versa. It is also possible to achieve limited amplitude of parametric oscilla-tions at resonance. This paper is devoted to the further study of the resonance properties of oscillatory systems dependent on the energy source (motor) of the induced oscillations. A study was made of the motion equations of a nonlinear and parametric system on analog computers and on mechanical models. Two systems were simulated: a system with a nonlinear characteristics of elastic couplings; and 2) a system with periodically changing parameters. The problem was studied for both small and large nonlinearities, and unstable operating modes were examined. It was established that the influence of the slope of the momentary characteristics of the energy source on the stability of system resonance modes is of essential importance. The regions of stable and unstable characteristic slopes were deter-mined. On the basis of the data derived, it is possible to determine the motion modes of the system if the characteristic slope of the energy source is known, and, vice versa, it is possible to determine the proper energy source for a desired kind of motion. The report is interesting primarily because of the results obtain-

Card 2/3

ACCESSION NR: AT4017772

ed, which have a direct bearing on a whole number of oscillatory systems of the type considered.  In addition, the successful use of a modern research technique - the analog electronic computer - deserves special attention.  "The work was carried out in the Institut mashinovedeniya AN SSSR (Institute of Machine Design) using the electronic equipment of the Laboratoriya kolebaniy Instituta mekhaniki MGU (Oscillation Laboratory, Institute of Mechanics), to the associates of which the author expresses his thanks."  Original article has:  14 figures, 4 formulas and 2 tables.

ASSOCIATION:  none

SUBMITTED: 00                    DATE ACQ:  28Feb64              ENCL:  00

SUB CODE:  IE, MM                NO REF SOV:  007                OTHER:  003

Card   3/3

POPOV, L.V., kand. tekhn. nauk, dotsent

Electromagnetic system vibrator for the excitation of torsional vibrations. Nauch. trudy MTILP no.29 275-277 '64.    (MIRA 18:4)

1. Kafedra detaley mashin Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

VAGATSOV, R.D.; SINEV, A.V.; FROLOV, K.V. (Moscow):

"The transverse bending of multilayered beams with viscous friction between the layers".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

FROLOV, K.V. (Moskva)

        Reducing vibration amplitude of resonance systems by controlled
        change of parameters. Mashinovedenie no.3:38-42  '65.

                                       (MIRA 18:6)

GANIYEV, R.F. (Moskva); FROLOV, K.V. (Moskva)

A typical problem of vibration damping in a nonlinear setup.
' Mashinovedenie no.4:17-23 '65.                    (MIRA 18:8)

L 32637-66   EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(j)/T/EWP(k)   IJP(c)   WW/EM/GD/RM

ACC NR: AT6010822                       SOURCE CODE: UR/0000/65/000/000/0149/0158

AUTHORS: Vaganov, R. D.; Sinev, A. V.; Frolov, K. V.

ORG: none

TITLE: Certain characteristics of transverse shear of multilayered beams, the layers of which are joined by a deformable glue

SOURCE: Moscow. Institut mashinovedeniya. Kolebaniya i prochnost' pri peremennykh napryazheniyakh (Vibrations and stability under variable stresses). Moscow, Izd-vo Nauka, 1965, 149-158

TOPIC TAGS: material behavior, composite beam, sandwich structure, shear strength, adhesion layer, material strength

ABSTRACT: A study is made of certain features of the transverse shear of composite beams. The work was conducted in the Laboratory of Dynamic Strength of the State Scientific Research Institute of Machine Behavior (Gosudarstvennyy nauchno-issledovatel'skiy institut mashinovedeniya). It is hypothesized that, up to a particular value of tangential stresses $\tau_0$ (see Fig. 1) in the plane of adhesion, the glue rigidly bonds the layers. From the moment that the stress $\tau_0$ is reached, plastic flow of the adhesive and slip between layers 1 and 2 (see Fig. 2) commence. This statement of the problem presupposes that the glue corresponds to a model of a "stiff plastic body" (L. M. Kachanov, Osnovy teorii plastichnosti. M. GITTL, 1956),

Card 1/3

L 32637-66

ACC NR: AT6010822

and the thickness of the adhesive is small in comparison with the thickness of the bonded layer and thus can be ignored. Basic equations of shear of an infinitely wide two-layered plate are written as

$$2GU = -\frac{\partial F}{\partial x} + 2\alpha\psi.$$

$$2GV = -\frac{\partial F}{\partial y}.$$

where U and V are displacements in the X and Y directions. The stresses are

$$\sigma_x = -\frac{\partial^2 F}{\partial y^2} + \alpha\frac{\partial\psi}{\partial x},$$

$$\sigma_y = \frac{\partial^2 F}{\partial x^2} - \alpha\frac{\partial\psi}{\partial x},$$

$$\tau_{xy} = -\frac{\partial^2 F}{\partial x\,\partial y} + \alpha\frac{\partial\psi}{\partial y},$$

$$\sigma_z = \frac{2-\alpha}{2}\cdot\sigma_x.$$

where $F = \phi + \psi$, and $\phi$ (x, y) and $\psi$ (x, y) are harmonic functions. Two sets of related functions are stated: the first gives expressions for stresses and displacements arising from elastic deformation of the body; the other accounts for
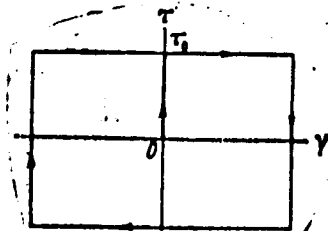
Card 2/3

L  32637-66
ACC NR: AT6010822



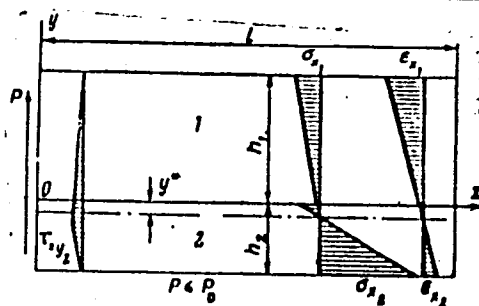Fig. 1.  Assumed dependence of tangential stress $\tau$.

Fig. 2.  Diagram of transverse shear of an infinitely wide two-layered plate.

plate distortion as a solid body.  Several conditions of stress and deformation are developed in demonstration of the system solution.  A description of an experimental method is given, and plots of longitudinal deformations of composite beams are shown.  The authors thank mechanics V. I. Tereshchenko and B. N. Kashkov and laboratory technician N. O. Al'perova, who took part in the work, and N. P. Kandel', who directed the fabrication of the special double-layered samples.  Orig. art. has: 27 equations and 7 figures.

SUB CODE: 13/        SUBM DATE: 05Aug65/        ORIG REF: 007/    OTH REF: 002

Card 3/3

ACC. NR: AP0034020                          SOURCE CODE:   UR/0380/66/000/006/0059/0065

AUTHOR:  Safronov, Yu. G. (Moscow); Frolov, K. V. (Moscow)

ORG:  none

TITLE:  Vibration analysis of the cylinder block of an axial piston pump

SOURCE:  Mashinovedeniye, no. 6, 1966, 59-65

TOPIC TAGS:  vibration analysis, vibration measurement, axial pump, mechanical vibration, machine vibration, hydraulic pump, strain gage

ABSTRACT:  An experimental method for determining the clearance between the cylinder block and the distributor of an axial piston pump by the use of strain gages is described. With the experimentally derived results and oscillograms it is possible to determine the nature of the vibrations of a pump's cylinder block in a steady or transitional stage of operation. In this analysis, a dynamic model of a cylinder block on an elastic oil layer was used. The motion of the investigated system, having four degrees of freedom, was defined by a system of differential equations. Results showed that under all operating conditions the nine-cylinder block of the pump running at 1000 rpm developed a vibration frequency of 150 hz, which coincided with the first harmonic of the hydraulic force pressing the cylinder block against the distributor during operation. Results indicated that an increased load on the pump increased

Card: 1/2                                    UDC:  621.654

ACC NR: AP6004620

the vibration amplitude of the cylinder block. The oscillograms showed that during compression the average clearance between the distributor and cylinder block decreased and increased during intake. The described experimental method is recommended for investigating very small clearance variations in axial-piston pumps. The criteria of this article may be of interest for design studies on new hydraulic axial piston equipment. Orig. art. has: 5 figures. [WA-98]

SUB CODE: 13, 20/ SUBM DATE: 15Dec65/ ORIG REF: 006/

Card 2/2

ACC NR: AP6034620                    SOURCE CODE: UR/0380/66/000/006/0059/0065

AUTHOR: Safronov, Yu. G. (Moscow); Frolov, K. V. (Moscow)

ORG: none

TITLE: Vibration analysis of the cylinder block of an axial piston pump

SOURCE: Mashinovedeniye, no. 6, 1966, 59-65

TOPIC TAGS: vibration analysis, vibration measurement, axial pump, mechanical vibration, machine vibration, hydraulic pump, strain gage

ABSTRACT: An experimental method for determining the clearance between the cylinder block and the distributor of an axial piston pump by the use of strain gages is described. With the experimentally derived results and oscillograms it is possible to determine the nature of the vibrations of a pump's cylinder block in a steady or transitional stage of operation. In this analysis, a dynamic model of a cylinder block on an elastic oil layer was used. The motion of the investigated system, having four degrees of freedom, was defined by a system of differential equations. Results showed that under all operating conditions the nine-cylinder block of the pump running at 1000 rpm developed a vibration frequency of 150 hz, which coincided with the first harmonic of the hydraulic force pressing the cylinder block against the distributor during operation. Results indicated that an increased load on the pump increased

Card 1/2                         UDC: 621.654

ACC NR:  AP6034620

the vibration amplitude of the cylinder block.  The oscillograms showed that during compression  the average clearance between the distributor and cylinder block decreased and increased during intake.  The described experimental method is recommended for investigating very small clearance variations in axial-piston pumps.  The criteria of this article may be of interest for design studies on new hydraulic axial piston equipment.  Orig. art. has:  5 figures.  [WA-98]

SUB CODE:  13, 2D/  SUBM DATE:  15Dec65/  ORIG REF:  006/

Card   2/2

ACC NR₁ AP7002929

AUTHOR:  Dimentberg, M. F.; Frolov, K. V.

ORG:  Institute of Problems of Mechanics, AN SSSR, State Scientific Research Institute of Machines (Institut problem mekhaniki AN SSSR, Gosudarstvennyy nauchno-issledovatel'skiy institut mashinovedeniya)

TITLE:  The Sommerfeld effect in a system with a randomly varying characteristic frequency

ABSTRACT:  A study is made of the Sommerfeld effect observed in the oscillating behavior of a motor rotor supported elastically.  Resonance properties of the linear oscillating system of differential equations, brought about by forces of inertia of an unbalanced rotor with random variation of the characteristic frequency, are studied.  The solution indicates that the Sommerfeld effect may be reduced under certain conditions when the parameters are randomly varied; that is, the rotor may pass beyond the critical resonance state without the addition of supplemental energy to the motor.  The method of averaging is used to find the mathematical expectations for the

UDC:  531.395

Card 1/2

ACC NR: AP7002929

substituted variables, the solution for which is given in standard form.  Oscillo-
grams are presented to show the results of experimental verification.  Presented by
Academician A. Yu. Ishlinskiy on 18 February 1966.  Orig. art. has:  8 formulas, 2
figures.

SUB CODE:  13,12/    SUBM DATE:  11Feb66/    ORIG REF:  009/    OTH REF:  001

Card 2/2

1. FROLOV, L., Eng.

2. USSR  (600)

4. Ensilage

7. Over-all mechanization of silage production.  MTS  13 No. 5, 1953.

9. <u>Monthly</u> <u>List</u> <u>of</u> <u>Russian</u> <u>Accessions</u>, Library of Congress, ___April___ 1953, Uncl.

FROLOV, L.A., inzh.

Problem of the movement of loose materials on a rotating horizontal plane. Vest.mash. 41 no.2:24-27 F '61.      (MIRA 14:3)

1. NIITsEMMASH, g. Kuybyshev.
                              (Dynamics)

FROLOV, L.5

87892

26.2120

S/114/60/000/005/006/006
E194/E255

AUTHORS:

Deych, M.Ye., Doctor of Technical Sciences,
Zaryankin, A. Ye., Candidate of Technical Sciences,
Lebedev, A. Ye., Candidate of Technical Sciences and
Frolov, L. B., Engineer

TITLE: An Instrument for Measuring the Torque, Speed and Power on High-Speed Turbines

TEXT:      In development work on blading very high speed experimental turbines are used, and the customary methods of measuring torque are often inapplicable. It is most convenient in such cases to measure torque in terms of the angular strain of the rotating shaft, but when the speed is of the order of 35 000 r.p.m. it is very difficult to take current from moving contacts on the rotor. An investigation of the operation of the various pickups carried out in the Moscow Power Engineering Institute showed that satisfactory results may be obtained with induction pickups, which are easily fitted to both experimental and regular production turbines. Impulses from these pickups can be used to measure both torque and speed. Two toothed magnetic

Card 1/4

87892

S/114/60/000/005/006/006
E194/E255

An Instrument for Measuring the Torque, Speed and Power on
High-Speed Turbines

discs are fitted to the rotating shaft and as they turn they
induce impulses in the pickups.  When there is no strain and the
shafts are not twisted, the pickups are arranged with a phase
displacement of half the pitch of one of the teeth in the disc.
As the machine is loaded and the shaft twists the phase relation-
ship between the two series of impulses alters and is measured.
The instrument has two shaping circuits, each containing an
amplifier, a limiter, a differentiating circuit and an impulse
generator.  This shaper circuit serves to amplify the pickup
signal and to convert it into a signal of standard shape with a
steep wave-front.  There is a comparator device that measures the
phase relationship between the impulses.  The same pickups are
used for speed measurement.  The output of the shaping circuits
is applied to a trigger, which is a switching device controlling
the charging and discharging of capacitors.  The mean charging
current of the capacitors is proportional to the speed.  The
reliability of the measurements depends on the construction of the

Card 2/4

87892
S/114/60/000/005/006/006
E194/E255

An Instrument for Measuring the Torque, Speed and Power on High-Speed Turbines

pickups. The pickup base is made of permalloy sheet 0.1 mm thick clamped between two diamagnetic holders; it carries a measuring coil of 100-500 turns. The output of the measuring coils has a saw-tooth wave-shape, the amplitude of which increases with the speed. A schematic circuit of the instrument is given and the various units, namely, the shaping unit, the torque measuring unit, the speed measuring unit and the power measuring unit are briefly described. An experimental rig for testing the device was set up. It consisted of a motor driving the shaft with toothed discs which in turn drove a generator, using special couplings. The arrangement was such that a calibration curve could be obtained of the instrument reading as a function of the pickup displacement, as plotted in Fig. 7. The graph shows a linear relationship between the instrument reading and the phase displacement. In measuring torque with an electronic dynamometer good results could be obtained by using torsion couplings, the design of which is briefly described. In preliminary tests the

Card 3/4

87892
S/114/60/000/005/006/006
E194/E255

An Instrument for Measuring the Torque, Speed and Power on
High-Speed Turbines

sensitivity was 100 microns displacement over the full scale,
corresponding to a maximum angle of twist of 0.1°; however, the
readings were not stable and depended on the speed of the disc.
When the sensitivity was reduced to 0.5° of twist for full scale
the readings were stable and independent of speeds.  Good results
can also be obtained using photo-electric pickups with the shafts
rotating at any speed, including low speeds.  In some cases the
toothed wheels may be replaced by magnetic inserts of various
kinds: the load on the flexible couplings of a turbine type ВK-130
(VK-100) can be measured in this way.  By using the instrument on
power station turbines feeding into a common system it is possible
to investigate transient processes in the machines when the syst-
em load changes, and to obtain satisfactory data about the opera-
tion of the governor system.  There are 8 figures and 3 references;
1 Soviet and 2 non-Soviet.

Card 4/4

27085
S/143/61/000/001/004/006
A207/A126

*zb.ᵧ194*

AUTHORS:      Frolov, L. B., Engineer, Frolova, Z. V.

TITLE:        Electronic automatic safety device

PERIODICAL:   Energetika, no. 1, 1961, 59 - 64

TEXT:         A description is given of the new safety device used in the protection of turbines against overspeeding. It is intended for high-speed, mostly experimental, turbines, but can be used in other machines as well. Contrary to the more widely used mechanical automatic safety devices, the machine in question is based on electronics and has a high reliability. The turbines are protected in the following manner: a transmitter of sinusoidal signals of the induction type is located on the turbine shaft. Its frequency is proportional to the turbine rotations. The signal from the transmitter is fed to the automatic safety device. With an increase in the number of revolutions of the turbine close to the limit, the frequency of the transmitter signal reaches a frequency of $f_0$, to which the automatic device is set. The latter switches on an electromagnet with a spring, acting then upon the valve. In the position "set", the electromagnet is switched on and presses the spring. At the signal "stop", the relay of the automatic device

Card 1/4

27085

Electronic automatic safety device

S/143/61/000/001/004/006
A207/A126

breaks the circuit of the electromagnet. the spring moves the valve, acting through a row of intermediate links on the vent. The vent has a special signalling device. If the vent has not closed after a certain period of time by control of the automatic device, the relay comes into action, which switches in the auxiliary elements of the accident-prevention device of the turbine. The principle of the device is as follows: an intensified signal is fed to the double-T bridge and to the phase-shifting chain of the compensating channel. Intensified signals from the T-shaped bridge and from the phase-shifting chain, are fed to the phase detector. It is assumed that the difference of the main and compensating channels is equal to zero at frequencies less than $f_0$. At frequencies greater than $f_0$, the relay $R_1$, disconnects the electromagnet of the performing element. From the main amplifier, the signal is fed also to the selective amplifier of the auxiliary channel. The latter is an amplifier with a negative feed-back connection through the double-T bridge. The outlet of the amplifier through the locked detector, enters relay $R_2$. At a frequency of $f_0$ relay $R_2$ begins to work regardless of $R_1$, disconnecting the circuit of the electromagnet of the performing element. A change in the capacity limit is brought about by regulating the frequency $f_0$ of the bridge which, in turn, is carried out by blocking alternating resistances, (for smooth change-over) and switches (for fixed values). The regulating of $f_0$ of both channels and the generator is carried out by a handle and has a graduated scale. The bridge is made of

Card 2/4

27085

S/143/61/000/001/004/006
A207/A126

Electronic automatic safety device

temperature-resistant elements. The time relay is started by a signal of any of
the relays $R_1$ and $R_2$, and after a certain period of time a pulse is fed to the
auxiliary circuits of the valve closing. If in this period of time the signalling
device for closing the valve has begun to function, then the circuit leading to
the performing elements is broken. It is pointed out that a failure of two special-
ly selected elements could deprive the turbine of its protection. This deficiency
can be eliminated and the dependability of the device increased by introducing
a block with four automatic protection units. Thus, the instrument has a design
of assembly units. The instrument also has a periodic service checker which is a
$C_4$ -60 (SD-60) motor, with a reducing gear and a contact drum. The tests were
carried out on an experimental radial turbine at 15,000 - 20,000 rpm. The follow-
ing advantages of the electronic device are listed as compared to the widely-used
mechanical type: 1) it can be used in high-speed machines, 2) it is easy to check,
can be tested during performance, 3) the capacity limit can be easily changed, 4)
it can function without a lubricating system. The disadvantages of the device are:
the comparatively complex scheme, which is connected with a lesser reliability of
the parts. There are 4 figures.

Card 3/4

27085

S/143/61/000/001/004/006
A207/A126

Electronic automatic safety device

ASSOCIATION:   Moskovskiy ordena Lenina energeticheskiy institut, Kafedra parovykh
i gazovykh turbin (The Moscow Order of Lenin Power Engineering De-
partment of Steam and Gas Turbines)

SUBMITTED:   March 21, 1960

Card 4/4

9. 7/50

AUTHORS:     Bogolyubov, V.E., Doctor of Technical Sciences;
             Shamayev, Yu.M., Candidate of Technical Sciences;   and
             Frolov, L.B., Engineer

TITLE:       Analysis of the operation of a single-pulse shift-
             register taking into account the nonlinearity of the
             ferromagnetic material

PERIODICAL:  Elektrichestvo, no.7, 1962, 1-5

TEXT:        Guidelines are given on the selection of component
parameters for a single-pulse magnetic-core shift-register with a
capacitive delay in the loop;  the nonlinear behaviour of the
ferrite is taken into account.  Starting from the empirical
equation for the magnetization impulse

$$Q(B) = \int_o^t (H - H_o) \, dt$$

expressed by Yu.M. Shamayev et al (Izv.AN SSSR, seriya fizich.,
v.23, no.3, 1959) as:
Card 1/5

Analysis of the operation of, a ....     S/105/62/000/007/001/004
                                         E200/E135

$$Q(B) = \frac{1}{\delta} \text{Tan}^{-1} \frac{B}{B_s} - \frac{1}{\delta} \text{Tan}^{-1} \frac{B_{initial}}{B_s} \qquad (4)$$

where $\delta = r_m/B_s$, and using the circuit shown in Fig.2, the authors derive the following criteria for the principal circuit parameters:

$$\frac{w_1^2 + w_2^2}{R} > 3 \times 10^6 \, Cw_2^2 \qquad (11)$$

$$w_{2 \, opt} = \sqrt{w_1^2 + \frac{R\ell}{Sr \, (B_r)}} \qquad (12)$$

$$RH_o \gg \frac{Q(B_r)}{C} \qquad (24)$$

$$C \gg \frac{H_o S B_r w_1^2}{R^2 \ell} \qquad (25)$$

Card 2/5

Analysis of the operation of a ....

39027
S/105/62/000/007/001/004
E200/E135

where: $S$ is the cross-sectional area of the core; $\ell$ is the length of the core; $u_C$ is the voltage across the capacitor; $w_1$ and $w_2$ are the number of turns in the input and output windings respectively; $B_r$ is the residual induction. Calculations show that the resistance $R$ has a great effect both upon the process of charging the capacitor and the remagnetization. At large values of $R$ remagnetization does not occur at all. Consequently $R$ should not exceed the upper limit found from inequality (11). It should not be very small, since then the voltage $u_{C_{max}}$ decreases sharply and, at very low values of $R$

and small capacitances, remagnetization again fails to occur. In the illustrative case considered the size of the resistance $R$ does not affect greatly the mode of operation while it remains between the limits of 100 - 300 ohms. Within these limits it is possible to select the actual value of $R$ from other considerations (minimal power loss, noise stability, etc). The size of the capacitor has the greatest effect upon the speed of operation of the register and from this viewpoint the capacitance should be
Card 3/5

chosen as small as possible. However, a reduction of . C will lead to a lowering of the stability of the remagnetization, as can be seen from inequalities (24) and (25). To obtain the maximum stability one should select the value of the capacitance by taking these conditions into consideration, yet without exceeding the bounds of inequality (11). Relation (12) shows that . $w_2$ should exceed $w_1$. As $w_1$ increases, at first the stability of operation of the register is improved, and then the effect of $w_1$ upon the stability is reduced. The influence of the number of turns $w_2$ is indirect; expressing itself through the voltage $u_{C_m}$. To obtain the highest possible value of $u_{C_m}$ one should take neither very low nor very high values of $w_2$. Optimal $w_2$ lies close to the value determined by Eq.(12). As $H_m$ increases the maximal voltage on the capacitor increases and, consequently, the reliability of operation of the register is improved. At the same time the operating speed of the. shift-register is increased but the power requirements are raised. There are 4 figures and 2 tables.
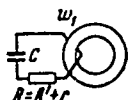
Card 4/5

Analysis of the operation of a ...   S/105/62/000/007/001/0C4
                                      E200/E135

ASSOCIATION: Moskovskiy energeticheskiy institut
             (Moscow Power Engineering Institute)

SUBMITTED:   July 17, 1961

Fig.2



Card 5/5

ACCESSION NR: AP4014406                 S/0143/63/000/012/0064/0072

AUTHOR: Deych, M. Ye. (Doctor of technical sciences, Professor);
Zaryankin, A. Ye. (Candidate of technical sciences); Mikhnenkov, L. V.
(Engineer); Frolov, L. B. (Engineer)

TITLE: Effect of throttling ring on the operation of a radial-axial turbine

SOURCE: IVUZ. Energetika, no. 12, 1963, 64-72

TOPIC TAGS: turbine, radial axial turbine, turbine power control, throttling
turbine control, throttling ring turbine control

ABSTRACT: Controlling turbine power by the introduction of a throttling ring
between the nozzle-box assembly and the rotor was experimentally investigated.
A turbine described by A. Ye. Zaryankin, et al. (IVUZ. Energetika, no. 8, 1961)
was used at 1.82 pressure drop and 0.17, 0.282, and 0.47 relative ring
throttling. At 47% throttling, the turbine efficiency was 15% lower. The

Card 1/2

ACCESSION NR: AP4014406

theoretical explanation of losses associated with this type of throttling is given in the article. The above-described "attempt to throttle the flow in the gap between the nozzle box and the rotor did not yield favorable results .... and can be recommended for cases where reliable control devices of minimum size are required. The last requirement may prove decisive in transportation plants...."
Orig. art. has: 7 figures and 13 formulas.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power-Engineering Institute)

SUBMITTED: 19Jun63          DATE ACQ: 14Feb64          ENCL: 00

SUB CODE: PR, AP          NO REF SOV: 005          OTHER: 000

Card 2/2

FROLOV, L.B.

Phase method for measuring torque.  Trudy MEI no.47:209-216 '63.
(MIRA 17:1)

FROLOV, L.B.; KHROMOV, M.K.; VORONIN, V.G.

Using the electron torsion meter for determining the rolling resistance of tires. Kauch. i rez. 24 no.9:34-38 '65.

(MIRA 18:10)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

AMELIN, S.V., prof., doktor tekhn.nauk (Leningrad); YAKOVLEV, V.F., doktor tekhn.nauk (Leningrad); SEMENOV, I.I., kand.tekhn.nauk (Leningrad); FROLOV, L.N., inzh. (Leningrad)

Frogs with movable parts. Zhel.dor.transp. 47 no.12:51-55 D '65.
(MIRA 18:12)

FROLOV, L.V.

Device for measuring the torque on high-speed shafts.  Izm.tekh.
no.8:36 Ag '62.                                      (MIRA 16:4)
                    (Torque--Measurement)

FROLOV, L.V., inzh.; EPSHTEYN, S.M., inzh.; PODCHEKAYEV, V.A., inzh.

Mesh-reinforced vault sections. Transp. stroi. 11 no.10:29-32
O '61.                                         (MIRA 14:10)
(Escalators) (Tunnels) (Reinforced concrete construction)

FROLOV, M.

Frolov, M. - "In one's own factory", (On the Leningrad Krasnyy Vyborzhets Plant, outline), Ogonek, 1949, No. 17, p. 13-14.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).

FROLOV, M., inzh.

Our technical improvements. Sil'. bud. 9 no.9:7-8 S '59.

(MIRA 12:12)

1.Selidovskaya mezhkolkhoznaya stroitel'naya organizatsiya Stalinskoy oblasti.
(Brickmaking machinery)

FROLOV, M., podpolkovnik

In aid to academy teachers. Komm. Vooruzh. Sil 46 no.14:54-57 Jl
'65.
(MIRA 18:

FROLOV, M.

Secret of success lies in the proper organization of pro-
duction. Sel'. stroi. 16 no.6:18-19 Je '61.     (MIRA 14:7)

1. Predsedatel' soveta mezhkolkhoznoy stroitel'noy organizatsii
Komsomol'skogo rayona Ivanovskoy oblasti.
       (Komsomolskiy District--Construction industry)

FROLOV, M., inzh.

How we improve the quality of clay roofing tiles.  Sil'.bud.
10  no.5:8  My  '60.                              (MIRA 13:7)

1. Selidovskaya mezhkolkhoznaya stroitel'naya organizatsiya
Stalinskoy oblasti.
                    (Selidovka--Tiles, Roofing)

LILIYENTAL'; A.A., grossmeyster; KISELEV, P., dispetcher, skakhmatist
pervogo razryada (Makeyevka, Donetskoy obl.); FROLOV, M.,
shakhmatist pervogo razryada (Gubkin Belgorodskoy obl.)

Chess. Sov.profsoiusy 19 no.3:29 F '63.                    (MIRA 16:2)
(Chess clubs)

FROLOV, M., inzh.

Establishing a montly schedule for a motortruck driver.  Avt.
transp. 43 no.1:29-30  Ja '65.                              (MIRA 18:3)

1. Belgorodskoye avtomobil'noye upravleniye.

FROLOV, M.A. (Moscow).

Surgical tooth extraction.   Stomatologiia no.4:48-49 Jl-Ag '53.

(MLRA 6:9)

(Dentistry, Operative)

FROLOV, M.A.

Penicillin therapy for acute inflammatory processes of the maxillo-
facial region. Stomatologiia no.1:61 Ja-F '55.          (MLRA 8:5)

1. Iz Tsentral'noy stomatologicheskoy polikliniki (Moskva).
    (PENICILLIN, therapeutic use,
       maxillofacial dis.)
    (JAWS, diseases,
       ther., penicillin)
    (FACE, diseases,
       ther., penicillin)

FROLOV, M.A.

Surgical methods for closing a Highmore's antrum opened during
tooth extraction. Stomatologiia 35 no.6:58 N-D '56 (MIRA 10:4)
(TEETH--EXTRACTION) (NOSE, ACCESSORY SINUSES OF--SURGERY)

DROZDOV, A.M.; MAKHACHASHVILI, A.I.; FROLOV, M.A., inzh. (g.Kaliningrad);
    LEONT'YEV, Yu.S.;POLITKO, K.I.

From the editor's mailbox.  Zhel.dortransp. 42 no.9:95-96
S '60.                                                (MIRA 13:9)

1. Stantsiya Olen'ye Oktyabr'skoy dorogi (for Drozdov).  2.
Nachal'nik stantsii Melitopol' (for Makhachashvili).  3. Starshiy
pomoshchnik nachal'nika stantsii Kamyshin Privolzhskoy dorogi
(for Leont'yev).  4. Dezhurnyy stantsii Kamyshin Privolzhskoy
dorogi (for Politko).
                          (Railroads)

FROLOV, M.A., inzh. (g.Kaliningrad)

Mechanical stand for gondola car repairs. Zhel.dor.transp. 43
no.2:65-66 F '61.                                          (MIRA 14:4)
            (Railroads—Repair shops)

FROLOV, M. A.

Distr: 4E4f/4F1
908. Frolov, M. A., On the evaluation of ventilation operatures
(in Russian), Nauch. tr. Novocherkas. politekh. in-ta 26, 17-33,
1955; Ref. Zh. Mekh. 1956, Rev. 5838.

In view of the absence of data for the calculation of the resist-
ance [...] more specific [...]
other, author has carried out special experimental studies on a
laboratory scale, which enabled him to establish the dependence
of the coefficient of resistance of the openings on the correspond-
ing [...]
[...]
calculations for the dimensions of the window openings placed
as described, nomograms are presented. An example is given of
the calculations [...]

Translation; courtesy Ministry of Supply, England

KARPOV, A.M., professor; FROLOV, M.A., kandidat tekhnicheskikh nauk;
CHUKHONTSEV, N.F., starshiy prepodavatel'.

Analyzing a case of booster fan performance in a mine ventilation
system. Ugol' 30 no.11:32-35 N '55.                        (MLRA 9:2)

1.Novocherkasskiy politekhnicheskiy institut.
        (Donets Basin--Mine ventilation)

FROLOV, M.A.

KARPOV, A.M., professor; FROLOV, M.A., kandidat tekhnicheskikh nauk;
CHUKHONTSEV, N.F., dotsent.

Improving the ventilation of a large anthracite mine.
Nauch. trudy HPI 32:71-83 '55.                    (MLRA 10:2)

(Donets Basin--Coal mines and mining)
(Mine ventilation)

AUTHOR:      Frolov, M. A.

TITLE:       On the Replacement of Ventilating Ports by Other Controlling Devices
             (O zamene ventilyatsionnykh okon inymi reguliruyushchimi ustroyst-
             vami)

PERIODICAL:  Nauch. tr. Novocherkas. politekhn. in-ta, 1955, Vol 32, pp 85-
             97

ABSTRACT:    A study is made of the possibility of replacing the ventilating
             ports, acting as regulating diaphragms for distributing the air in a
             mine among the various areas and mine cuts, by other devices
             called "portal apertures" by the author.

                                                    I. A. Shepelev

Card 1/1

*FROLOV, M. A.*

STEBAKOV, M.L.; FROLOV, M.A.

Improved methods of breakoff by undermining in continuous storage
systems. Gor. zhur. no.12:6-7 D '56.                    (MLRA 10:1)

1. Gosudarstvennyy Institut gornokhimicheskogo syr'ya (for Stebakov)
2. Rudnik imeni Kirova (for Frolov).
                (Mining engineering)

AUTHORS:   Frolov, M.A., Merkulov, V.A., Sergeyev, S.I., Khripkov, N.S.

TITLE:   On the Effectiveness of Using Auxiliary Blowers to Combat
Dust in Mines During Operation of UKT Combination Coal-
cutting-and-loading Machines (Issledovaniye effektivnosti pri-
meneniya vspomogatel'nykh ventilyatorov dlya bor'by s pyl'yu
pri rabote kombaynov UKT)

PERIODICAL:   Tr. Novocherkasskogo politekhn. in-ta, 1957, Vol 45/59,
pp 91-112

ABSTRACT:   Results are given of a study made of the effectiveness of
using auxiliary blowers to combat dust in mines at sites where
UKT combination cutting-and-loading machines are working
slender seams of anthracite. Conditions were investigated at
the working faces of several Donbass mines. The authors sum-
marize their findings as follows: 1- The rate of air flow at a
mine working-face when the auxiliary blower is turned off does
not, as a rule, exceed 0.25-0.35 m/sec---which is not up to
standard. 2- The use of auxiliary blowers makes is possible in
some cases to reduce the dust content of the air in a mine shaft

Card 1/2

SOV/124-58-5-5244

On the Effectiveness of (cont.)

by as much as 30-50%. 3- The dust content of the incoming current of sup-
posedly fresh air prior to its arrival at the working faces (where the studies
were being conducted) greatly exceeded the permissible limit from the point
of view of health protection. 4- To combat dust effectively at sites where
the combination cutting-and-loading machines are working slender, gently
slanting seams of anthracite, the rate of air flow at the working faces must
be increased to 0.7-1.0 m/sec.

Yu.A. Lashkov

1. Blowers--Effectiveness    2. Underground structures--Ventilation
3. Particles (Airborne)

Card 2/2

FROLOV, M.A., kand.tekhn.nauk

Research on the movement of a current of air through an air vent.
Trudy NPI 49:155-170 '59.                                    (MIRA 14:3)

1. Kafedra rudnichnoy ventilyatsii i tekhniki bezopasnosti.
Novocherkasskogo politekhnicheskogo instituta.
                    (Mine ventilation)

SHANOVSKAYA, S.S.; RASSOLOV, N.I.; BEKIRBAYEV, B.D.[deceased];
        PETRUKHIN, P.M.; GRODEL, G.S.; FROLOV, M.A.; CHERVINSKIY,
        M.S.; BOBRITSKIY, V.P.; POLYANSKIY, I.P.; NIKITIN, V.S., otv.
        red.; LUCHKO, V.S., red.izd-va; SHKLYAR, S.Ya., tekhn. red.;
        MAKSIMOVA, V.V., tekhn. red.

        [Handbook on controlling dust in coal mines]Spravochnoe po-
        sobie po bor'be s pyl'iu v ugol'nykh shakhtakh. [By S.S.
        Shanovskoi i dr.]  Moskva, Gosgortekhizdat, 1963. 190 p.
                                            (MIRA 16:6)

                        (Mine dusts)

TROL V. B.A., dotsent, kand. tekhn. nauk

Analysis of some bases of the work of auxiliary fans in dust control in the longwalls of nongaseous mines. Bor'ba s sil. dnii-67 '61                                    (MIRA 15:2)

1. Novocherkasskiy politekhnicheskiy institut.

L 16810-63

ACCESSION NR: AP3003263                                    S/0286/63/000/003/0031/0031

AUTHOR: Frolov, M. D.; Konstantinov, V. N.

TITLE: Equalizer for angular velocities of rotation.  Class H 02j; 21d sup. 2, 42 sub 05. No. 152910

SOURCE: Byul. izobreteniy i tovarnykh znakov, no. 3, 1963, 31

TOPIC TAGS: equalizer, angular velocity,  semiconductor, relay, voltage relay

ABSTRACT: Equalizer for angular velocities of rotation, in which thare is applied to two voltage relays, rectified envelopes of the beat voltages, which are shifted relative to each other by an angle, the sign of which determines the sequence of relay operation; its distinguishing feature is that in order to eliminate the need for rectifying the voltages applied to the equalizer, a voltage relays based on semiconductors and employed in the latter, the interlocking circuit between the voltage relays set up with the aid of a differentiating subcircuit and a supplementary triode. /Abstracter's note: complete translation./ Orig. art. has:  1 figure.

Card  1/3

L 16810-63
ACCESSION NR: AP3003263

ASSOCIATION: none

SUBMITTED: 15May61
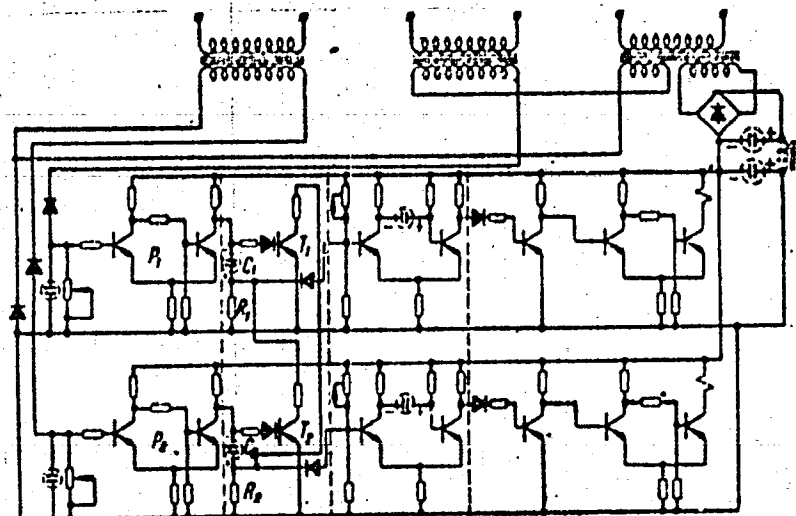
SUB CODE: GE

DATE ACQ: 23Jul63        ENCL: 01

NO REF SOV: 000        OTHER: 000

Card 2/3

ENCLOSURE: 1.



$P_1$ and $P_2$ -- voltage relays; $R_1$-$C_1$ and $R_2$-$C_2$ -- differentiating subcircuits; $T_1$ and $T_2$ -- supplementary triodes.

Card 3/3

KLYUYEV, G.M., kand.tekhn.nauk; YUNITSKAYA, Ye.I., starshiy inzh.;
RYAKOVA, E.Ya.; Prinimali uchastiye: PETROV, A.M.,; SHISHKIN, A.F.;
KNAUS, O.M.; RUSAKOVA, R.A.; STEPANOVA, L.G.; KALINKIN, V.F.;
COPKALOVA, N.K.; SACHKOV, V.F.; FROLOV, M.F.; LUKASHOVA, T.T.;
SAVKIN, P.S.

Grain-size distribution in the material produced by crushing rock.
Sbor. trud. NIIZHelezobetona  no.3:69-90  '60.          (MIRA 15:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut zhelezobeton-
nykh izdelii, stroitel'nykh i nerudnykh materialov (for Petrov,
Shishkin, Knaus, Rusakova, Stepanova, Kalinkin, Gopkalova, Sachkov,
Frolov, Lukashova, Savkin).
                                   (Stone, Crushed)

FROLOV, Matvey L'vovich, zhurnalist; ARKHAROVA, V.G., red.;
LEVONEVSKAYA, L.G., tekhn. red.

["The winged guard"; a book of feature stories on heroic
fliers] Krylataia gvardiia; kniga-reportazh o letchikakh-
geroiakh.  Leningrad, Lenizdat, 1963.  134 p.
(MIRA 16:12)

(World War, 1939-1945—Aerial operations)

ZENCHENKO, V.P.; FROLOV, M.L.

Pneumatic pulse counter. Mashinostroitel' no.9:26 S '62.
(MIRA 15:9)

(Calculating machines)

GERTS, Ye.V.; FROLOV, M.L.

Calculating pneumatic time relays. Stan. i instr. 35 no.12:
14-16  D '64                                (MIRA 18:2)

FROLOV, M.L. (Moskva)

Structur 1 synthesis of pneumatic systems of automatic  chines
taking into consideration the dynamics of their operation.
Mashinovedenie no.1:21-29 '65.                                    (MIRA 18:5)

GERTS, Ye.V. (Moskva); KREYNIN, G.V. (Moskva); FROLOV, M.L. (Moskva)

Experimental determination of the consumption ratio of pneumatic
systems. Mashinovedenie no.2:48-53 '65.

(MIRA 18:8)

GERTS, Ye.V.; FROLOV, M.L.

Dynamic investigation of timing devices in pneumatic systems
of automatic machines. Teor. mash. i mekh. no.107/108:5-17
'65.                                                       (MIRA 18:7)

L 31286-66   EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/EWP(1)/EWP(v)   DJ/BC

ACC NR: AP6020245                    SOURCE CODE: UR/0380/66/000/001/0051/0058

AUTHOR: Kreynin, G. V.(Moscow); Frolov, M. L.(Moscow)

ORG: none

TITLE: Determination of optimal parameters of a pneumatic hydraulic drive control system

SOURCE: Mashinovedeniye, no. 1, 1966, 51-58

TOPIC TAGS: pneumatic device, pneumatic control system, hydraulic equipment, reliability engineering, signal transmission, automatic control design

ABSTRACT: In order to overcome the shortcomings of electromagnetic control systems used for control of the hydraulic drives of machine tools, automatic production lines, etc., the USSR is now series-producing small pneumatic devices. For this purpose, part of the USEPPA (Universal System of Elements of Industrial Pneumo-Automatics) system. They can be used to replace electromagnet relay systems. The changeover not only provides higher reliability of the control system; it also makes it more fire and explosion safe. Dividing the pneumatic control process into three stages (transmission of pneumatic signal from transducer to control system; processing of signals in control unit; transmission of output signal from control system to hydraulic drive system), the authors analyse the operation of such control systems step-by-step, to aid planners in designing such control systems. With proper selection of element parameters, they report, the speed of operation of such a control system can be of the same order as that of an electrical system. Orig. art. has: 6 figures and 5 formulas. [JPRS]

SUB CODE: 13, 09/ SUBM DATE: 12Sep65/ ORIG REF: 005   UDC: 62-525

Card 1/1

FROLOV, M.N., slesar'.

Cleaning device for steam-boiler pipes. Neftianik 2 no.5:23-24
My '57.                                                  (MLRA 10:5)

1. Bakinskiy neftepererabatyvayushchiy zavod im. Andreyeva.
                 (Pipes, Deposit in)

*Frolov, M.N.*                                              92-2-18/37

AUTHOR:      Frolov, M.N., Mechanic

TITLE:       Furnace Pipes Are Hoisted With the Aid of a Boring
             Machine (Pod"yem pechnykh trub pri pomoshchi bormashiny)

PERIODICAL:  Neftyanik, 1958, Nr 2, pp 16 (USSR)

ABSTRACT:    In overhauling pipe stills the mechanics of the Baku
     refineries have been compelled until recently to lift and raise
     new pipes to the upper section of the furnace by hand. This
     operation required considerable effort and time. To facilitate
     this task the author, assisted by the turner P. Pogosov, worked
     out a method of hoisting furnace pipes with the aid of a boring
     machine previously used for pipe flaring. For this purpose the
     machine was slightly modified and equipped with additional roll
     and bush bearings, chains, hooks and other necessary parts. A
     pipe receiver was also installed at the upper section of the
     furnace. Two men are needed to handle the machine and to carry
     out the operation. The pipe is placed on the machine hooks which
     lift it to the upper section of the furnace, where it automati-
     cally rolls off due to its own weight. The suggested method of
     hoisting furnace pipes was accepted and introduced in the Nr 14

Card 1/2